

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

American Public University System

The Ultimate Advantage is an Educated Mind

School: Science, Technology, Engineering, and Math
Course Number: ELEN201
Course Name: Circuits I
Credit Hours: 3
Length of Course: 16 weeks
Prerequisite: (MATH240 and SCIN234)

Table of Contents

Instructor Information	Evaluation Procedures
Course Description	Grading Scale
Course Scope	Course Outline
Course Objectives	Policies
Course Delivery Method	Academic Services
Course Resources	Selected Bibliography

Instructor Information

Instructor:

Email:

[Table of Contents](#)

Course Description (Catalog)

This course presents concepts associated with DC circuit analysis and synthesis including: resistance, capacitance, inductance, Ohm's Law, Kirchhoff's Laws, node voltage analysis, mesh current analysis, superposition, Thevenin-Norton equivalents, and operational amplifiers.

[Table of Contents](#)

Course Scope

At the conclusion of this course you will have working knowledge of the key building blocks of DC circuit analysis and their application.

Course Objectives

After completing the course, the student should be able to accomplish these Course Objectives (CO):

- CO-1. Describe the basic laws governing circuit analysis.
- CO-2. Analyze a variety of basic circuits.
- CO-3. Determine and generate circuit parameters related to circuit design and theory.
- CO-4. Apply the fundamental concepts of basic laws, including Ohms Law, Thévenin and Norton equivalent circuits, and superposition.
- CO-5. Differentiate the properties of series and parallel circuits.
- CO-6. Perform various techniques for circuit analysis.

Course Delivery Method

This engineering course delivered via distance learning will enable students to complete academic work in a flexible manner, completely online. Course materials and access to an online learning management system will be made available to each student. Online assignments are due by Sunday evening of the week as noted and include Forum questions (accomplished in groups through a threaded forum), examination, and individual assignments submitted for review by the Faculty Member). Assigned faculty will support the students throughout this 16-week course.

The University requires that every student to contact their instructor at least weekly during the semester. Students are encouraged to post comments or questions in the respective Forum as they become available each week. Students may, of course, interact with the professor or other students via the chat room at any time.

Each student is responsible for the following:

- Completely reading the syllabus. Should questions arise about the syllabus or the course that are not covered or should the student need clarification, please contact the instructor via email or in the weekly forum.
- Reading email for important updates and course information each week.
- Reading the assignments in a timely manner to ensure all questions concerning all assignments and the Final Exam are specifically addressed.
- Completing assignments on time. Students will deliver completed assignments in the mode specified by the instructor. The details for each of these can be found in this syllabus and the Weekly Announcements.
- Submitting all assignments, completing the Forum activities and submitting the final exam on time. These are the graded submissions. Students should complete these during the.

Course Resources

Required Course Textbooks

Author	Book Title	Publication Info	ISBN
Ulaby, Fawwaz T., Maharbiz, Michel M. and Furse	Circuit Analysis and Design	Michigan Publishing	978-1-60785-484-5

The required textbook can be found at:

<https://services.publishing.umich.edu/publications/ee/>

Additional Resources

Author	Book Title	Publication Info	ISBN
Agarwal, Anant, Lang, Jeffrey H.	Foundations of Analog and Digital Electronic Circuits	Morgan Kaufman Publishers	978-1-55860-735-4

Web Sites

Site Name	Website URL/Address
LabView Basics	http://www.ni.com/gettingstarted/labviewbasics
LabView	http://www.ni.com/white-paper/7466/en

Evaluation Procedures

Describe how you will evaluate your students for each graded activity.

Weekly announcements will appear on Monday of each week in the online classroom. This announcement will also be e-mailed to each student. The announcement will discuss the assignments for the week along with any other pertinent information for the week.

Reading Assignments: Please refer to the Course Outline section of this syllabus for the weekly reading assignments.

Supplemental Readings:

Week 1 Introductions: Each student must log into the classroom and introduce yourself to the class. Your response is due by Sunday of Week 1. Your response must be greater than 250 words (a requirement) and include the following information.

- a. Your name
- b. Your university major or program
- c. Where you are in the program of study
- d. Your academic goals, to include why you are taking this class
- e. Information that you would like to share about yourself

Forum Assignments: The weekly discussion forum is for students to post their questions on course content for that week. This forum should not be used to discuss specific graded material questions prior to receiving feedback from the instructor (after the material is graded). If there is a question on a specific graded question, find a similar problem in the book and ask a question on that problem or concept. Asking specific questions on graded questions creates an unfair advantage and defeats the purpose of the assessment tool.

Lab Exercises: There are four laboratory exercises that must be completed. The labs may be completed using NI MultiSim. But It is recommended that you build the circuit using the parts in the parts list.

Exams: There will be three exams, each worth 10% of your final grade. It is an open book, open note exam. It will be administered without a proctor. Students must complete the numbered exam by the end of the week indicated in the schedule.

Late Assignments: Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. The policy for late lab reports and exams is ten percentage points deducted for each day late. After five days late, no credit will be given. There is no late policy for the final exam. The final exam must be completed by the last day of the course. No assignments will be accepted after the end of the course unless a student has an approved extension (see extension policy). Should you need additional time to complete an assignment please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine late submission of assignments will adversely affect your final course grade.

There are no extra credit or redo's allowed on work once submitted, and no extra credit or make-up assignments.

The points earned on the graded course assignments will determine the course grade. The final grade in the course will be based on total points. Grades will be assigned based on the following composite scores:

TASK	POINTS	% OF FINAL GRADE
Forum Participation	160	10%
Assignments	1500	50%
Labs	600	10%
Exam 1	100	10%
Exam 2	100	10%
Exam 3	100	10%
Total	2560	100%

Students' course grades will be posted as soon as the instructor receives and evaluates the last exam. Official grades will continue to be issued by the University on the grade report form. Instructors have 7 days from the end of the semester to submit their grades to the University.

[Table of Contents](#)

16– Week Course Outline

Please see the [Student Handbook](#) to reference the University's [grading scale](#).

[Table of Contents](#)

COURSE OUTLINE				
Week	Topic(s)	Course Objective(s)	Readings	Assignment(s)
1	Introduction	(CO-1)	Chapter 1 pages 1-20	Week 1 Introduce Yourself Forum Week 1 assignment
2	Basic Quantities	(CO-1, CO-2)	Chapter 1 pages 20-42	Week 2 Basic Quantities Forum Week 2 Assignment
3	Series Resistive Circuits	(CO-1, CO-2)	Chapter 2 pages 50-66	Week 3 Series DC Forum Week 3 Assignment
4	Parallel Resistive Circuits	(CO-3, CO-4, CO-5)	Chapter 2 pages 66 - 100	Week 4 Parallel Circuits Forum Week 4 Assignment Week 4 Prelab
5	Series and Parallel Circuits	(CO-1, CO-2, CO-3, CO-4, CO-5)	Chapter 2 pages 50-100	Week 5 Series and Parallel Circuits Forum Week 5 Assignment Week 5 Prelab Week 5 Lab on Ohms Law
6	Analysis Theorems and Techniques	(CO-4, CO-6, CO-7)	Chapter 3 pages 115-164	Week 6 Analysis Theorems Forum Week 6 Assignment Exam 1
7	Nodal Analysis	(CO-5, CO-6)	Chapter 3 pages 115-164	Week 7 Nodal Analysis Forum Week 7 Lab on Series Circuits Week 7 Assignment
8	Mesh Analysis	(CO-4, CO-5, CO-6)	Chapter 3 pages 115-164	Week 8 Mesh Analysis Forum Week 8 Assignment
9	Dependent Sources	(CO-4, CO-5, CO-6)	Chapter 3 pages 115-164	Week 9 Midterm Reflection Forum Week 9 Lab on Parallel DC circuits Week 9 Assignment
10	Operational Amplifiers	(CO-3, CO-4, CO-6)	Chapter 4 pages 183-235	Week 10 Operational Amplifiers Forum Week 10 Assignment
11	Operational Amplifiers continued	(CO-3, CO-4, CO-6)	Chapter 4 pages 183-235	Week 11 Operational Amplifiers continued Forum Week 11 Lab on Series and Parallel Circuits Week 11 Assignment

12	Resistor Capacitor Circuits	(CO-3, CO-4, CO-6)	Chapter 5 pages 248-268	Week 12 RC Circuits Forum Week 12 Assignment Exam 2
13	RC- First Order Circuits	(CO-4, CO-5, CO-6)	Chapter 5 pages 269-313	Week 13 First Order Circuits Forum Week 13 Assignment Week 13 Lab on Operational Amplifiers
14	Inductors	(CO-4, CO-5, CO-6)	Chapter 6 pages 330-373	Week 14 Inductors Forum Week 14 Assignment
15	RLC Circuits – Second Order Circuits	(CO-4, CO-5, CO-6)	Chapter 6 pages 330-373	Week 15 RLC Circuits Forum Week 15 Assignments Week 15 Lab on RLC Circuits
16	Review for Exam 3	(CO-3, CO-4, CO-5, CO-6)		Week 16 Final Debriefing Exam 3

[Table of Contents](#)

Policies

Please see the [Student Handbook](#) to reference all University policies. Quick links to frequently asked question about policies are listed below.

[Drop/Withdrawal Policy](#)

[Plagiarism Policy](#)

[Extension Process and Policy](#)

[Disability Accommodations](#)

Late Assignments

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade.

Netiquette

Online universities promote the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can

occasionally degenerate into needless insults and “flaming.” Such activity and the loss of good manners are not acceptable in a university setting – basic academic rules of good behavior and proper “Netiquette” must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the Forum of others.

- **Technology Limitations:** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Sakai classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note:** Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add “emoticons” to help alert your readers: ;-), :), J

Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

[Table of Contents](#)

Online Library

The Online Library is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Online Library provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to librarian@apus.edu.

- **Charles Town Library and Inter Library Loan:** The University maintains a special library with a limited number of supporting volumes, collection of our professors’ publication, and services to search and borrow research books and articles from other libraries.
- **Electronic Books:** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- **Electronic Journals:** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- **EE Program Guide:** Electronic resources and search capabilities are found in the program guide. The site <http://apus.campusguides.com/BSEE> includes links to specific journals, articles and book titles, as well as video and web resources.
- **Tutor.com:** AMU and APU Civilian & Coast Guard students are eligible for 10 free hours of tutoring provided by APUS. [Tutor.com](#) connects you with a professional tutor online

24/7 to provide help with assignments, studying, test prep, resume writing, and more. Tutor.com is tutoring the way it was meant to be. You get expert tutoring whenever you need help, and you work one-to-one with your tutor in your online classroom on your specific problem until it is done.

Request a Library Guide for your course (<http://apus.libguides.com/index.php>)

The AMU/APU Library Guides provide access to collections of trusted sites on the Open Web and licensed resources on the Deep Web. The following are specially tailored for academic research at APUS:

- Program Portals contain topical and methodological resources to help launch general research in the degree program. To locate, search by department name, or navigate by school.
- Course Lib-Guides narrow the focus to relevant resources for the corresponding course. To locate, search by class code (e.g., SOCI111), or class name.

If a guide you need is not available yet, please email the APUS Library: librarian@apus.edu.

[Table of Contents](#)

Turnitin.com

Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. Typically the course professor will establish a Turnitin.com access code for his/her classes. If the code has not been established, those who wish to use Turnitin.com may ask their professor to establish the code.

Selected Bibliography

There are numerous online resources to help you in better understanding the objectives outlined in this course. Please see the APUS Online Library, which has several circuit theory related textbooks available online.

[Table of Contents](#)